

# Restoring Fish Passage at WSDOT Stream Crossings

## Joint Transportation Committee

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November 10, 2016

Roger Millar, Secretary of Transportation

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# WSDOT Statewide Fish Passage Summary

- 1,989 WSDOT fish passage barriers statewide
  - 1,530 with significant habitat (>200 m)
- 301 statewide fish barrier corrections as of June 2016
- Nearly 1,000 miles of habitat opened



SR 9 Lake Creek north of  
Lake McMurray



# Federal “Culvert” Injunction March 2013

- 996 WSDOT culvert barriers subject to injunction as of June 2016
- 825 with significant habitat (>200 m)
  - Must be corrected by 2030
  - Some barriers (up to 10% of the habitat) can be deferred until they reach the end of their life, or corrected as part of other transportation projects
    - Requires about 475 barrier corrections to reach 90% of the habitat
- 171 barriers having <200 m habitat must be corrected as culverts reach the end of their life, or as part of other transportation projects



**Area Covered by Injunction**



# WSDOT Fish Passage Barriers

**Map Controls**

Layers Legend Basemap Search

**US v. WA Case Area Boundary**

US v. WA Case Area Boundary

**Corrected Barriers Statewide**

Corrected Barriers Statewide

**Uncorrected Barriers Statewide**

Uncorrected Barriers Statewide

- Total Blockage (Statewide)
- Partial Blockage (Statewide)

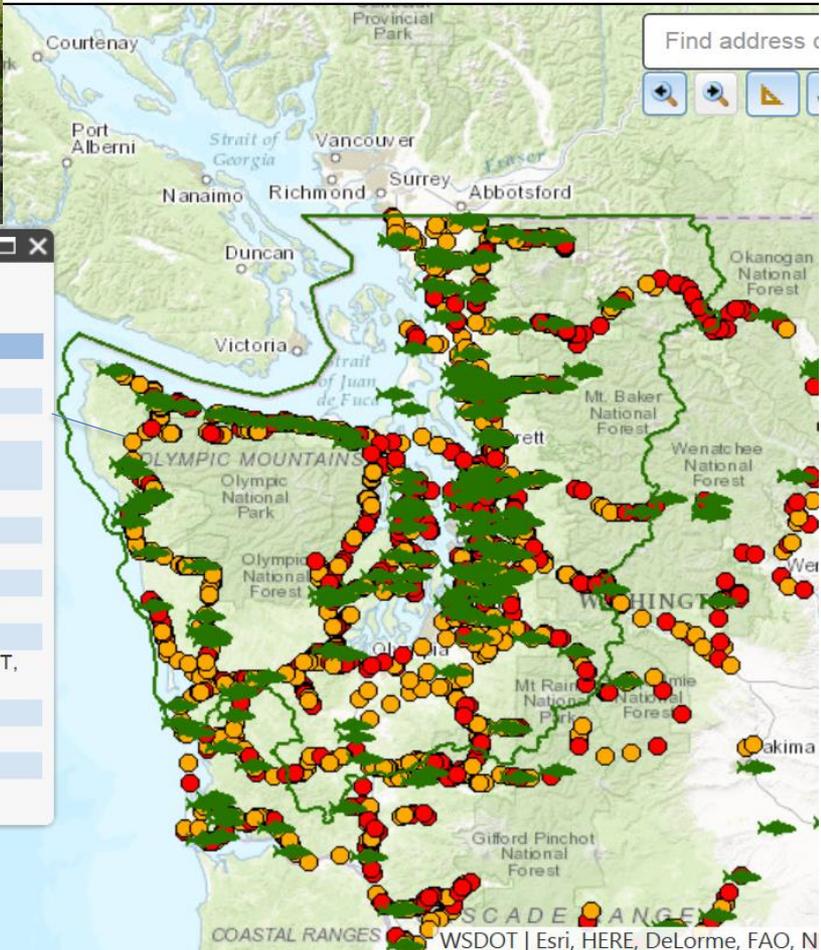
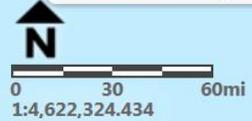


**Photos**

20.0312 0.60

Barrier Status	Yes
County	Clallam
Fish Use	Yes
Potential Habitat Gain (meters)	6644
MilePost	197.1
Percent Passable	67
Deficiency	Depth
Road	US 101
Greater than 200 m Habitat	Yes
WDFW ID	20.0312 0.60
Species	CO, SH, SRCT, RT
Stream Name	Swanson Cr
Tributary To	Soleduck R
WRIA Number	20.0312

[Zoom to](#) [Google Street View](#) [Print](#)



<http://www.wsdot.wa.gov/Projects/FishPassage/default.htm>

# Injunction Standard – Crossings Must Mimic Natural Stream Conditions

This standard applies to stand-alone projects as well as fish passage projects completed as part of larger transportation projects



BEFORE: Existing US 101 Owl Creek barrier culvert.



AFTER: New 10-foot wide stream crossing constructed 2014.

# Evolution of a fish passage project

## SR 99 West Fork Hylebos Creek



**BEFORE:** Previous culvert had excessive velocities and outfall drop.



**AFTER:** New 20-foot wide stream crossing constructed 2015. *Photo taken 1 month after construction.*



**AFTER:** New 20-foot wide stream crossing constructed 2015. *Photo taken 1 year after construction.*

# Correction Status – 2013 Injunction through 2016 Construction Season

**Injunction Target – Open 90% Habitat by 2030 (~475 Barrier Corrections)**

Barriers Addressed Through 2016	Number	Cost	
Stand Alone Corrections	29	\$67.2 M	(Actual)
Included in Larger Transportation Projects, including Emergency Repairs	14	\$30.2 M*	(Estimate)
<b>TOTAL</b>	<b>43</b>	<b>\$97.4M</b>	

\*From 2011 Program-Level Estimate

Remaining Barriers to be Addressed to Reach 90% Habitat by 2030	Number
Stand Alone Corrections	432
Included in Larger Transportation Projects	TBD**
<b>TOTAL</b>	<b>432</b>

**GRAND TOTAL      ~475**

\*\*Evaluation in Process

# Cost to Meet Culvert Injunction

## **\$2.4 billion – current estimate**

- Estimate determined considering stream width; length of culvert and height of roadway above the culvert
- Using the factors above, projects were categorized as small, medium and large
- Standard costs were established for these categories
- Overall estimate includes inflation

## **Estimate doesn't include:**

- correcting barriers outside injunction area
- cost of correcting barriers with <200 meters of habitat
- cost of correcting future barriers

# Fish Passage Injunction Delivery Plan

## Current Law, including Connecting Washington Funds

Biennium	13-15	15-17	17-19	19-21	21-23	23-25 to 29-31	Cumulative Total thru 29-31
Total Funding	\$23.8	\$88.7	\$85.0	\$84.4	\$91.4	\$290.9	\$664.2
Cumulative Barriers Corrected	18*	43*	63	84	98	149*	140-150*
Cumulative Habitat Gain %	4%	14%	24%	37%	42%	55%	50% to 60%**

\*Includes barriers in other highway projects

\*\*Per tribal agreement, WSDOT re-estimates habitat blocked yearly based on new information

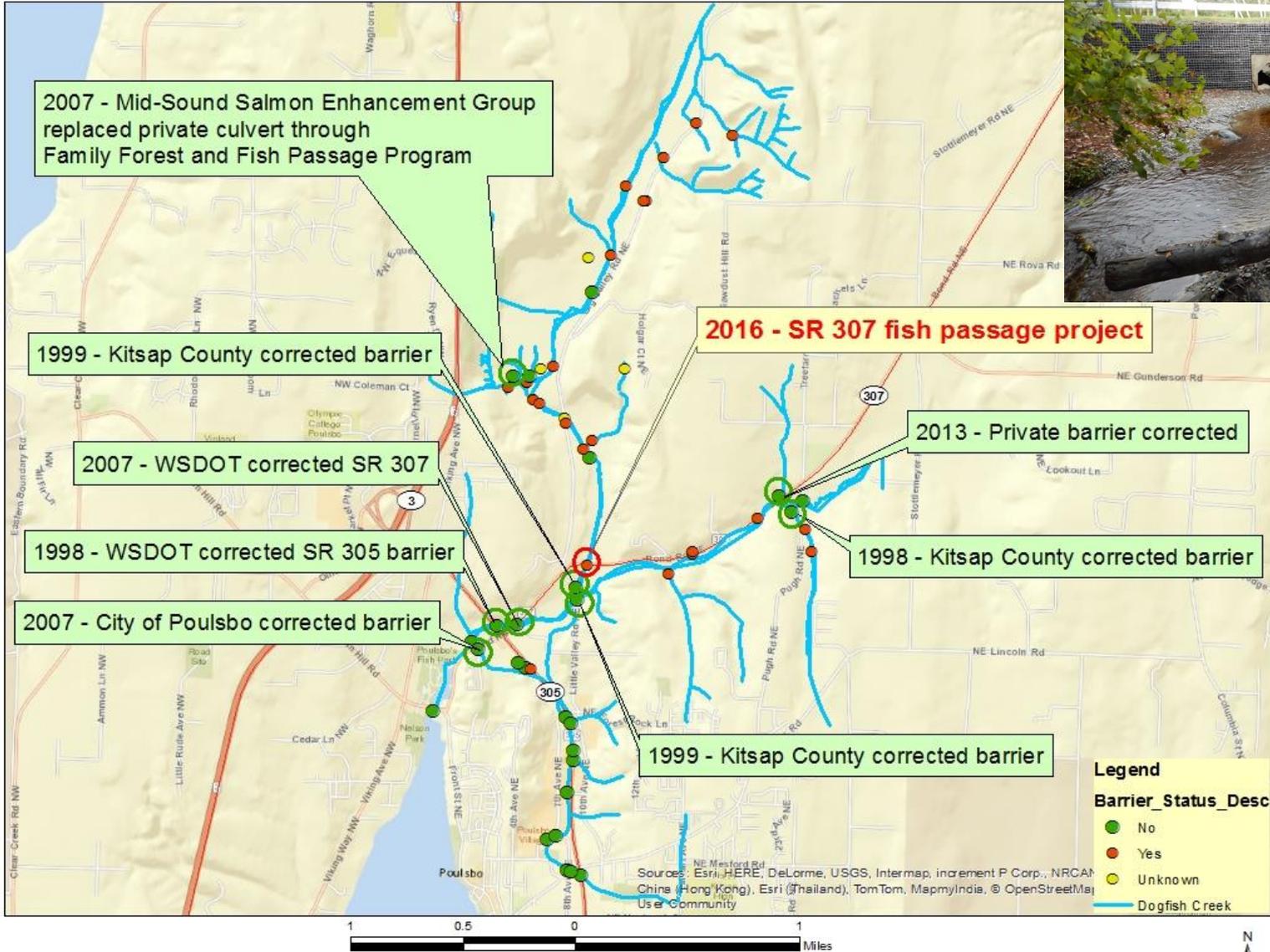
# Fish Passage Barrier Removal Board

- Collaborative effort among state agencies, local governments, tribes, private landowners, and salmon recovery groups (RCW 77.95.160)
- Evaluating priority locations for watershed approach
- Promoting coordination and partnerships building on previous and planned fish passage investments by WSDOT and others
- WSDOT serves on Board, coordinates work as much as possible

SR 522 Lyon Creek  
project constructed in  
2015.

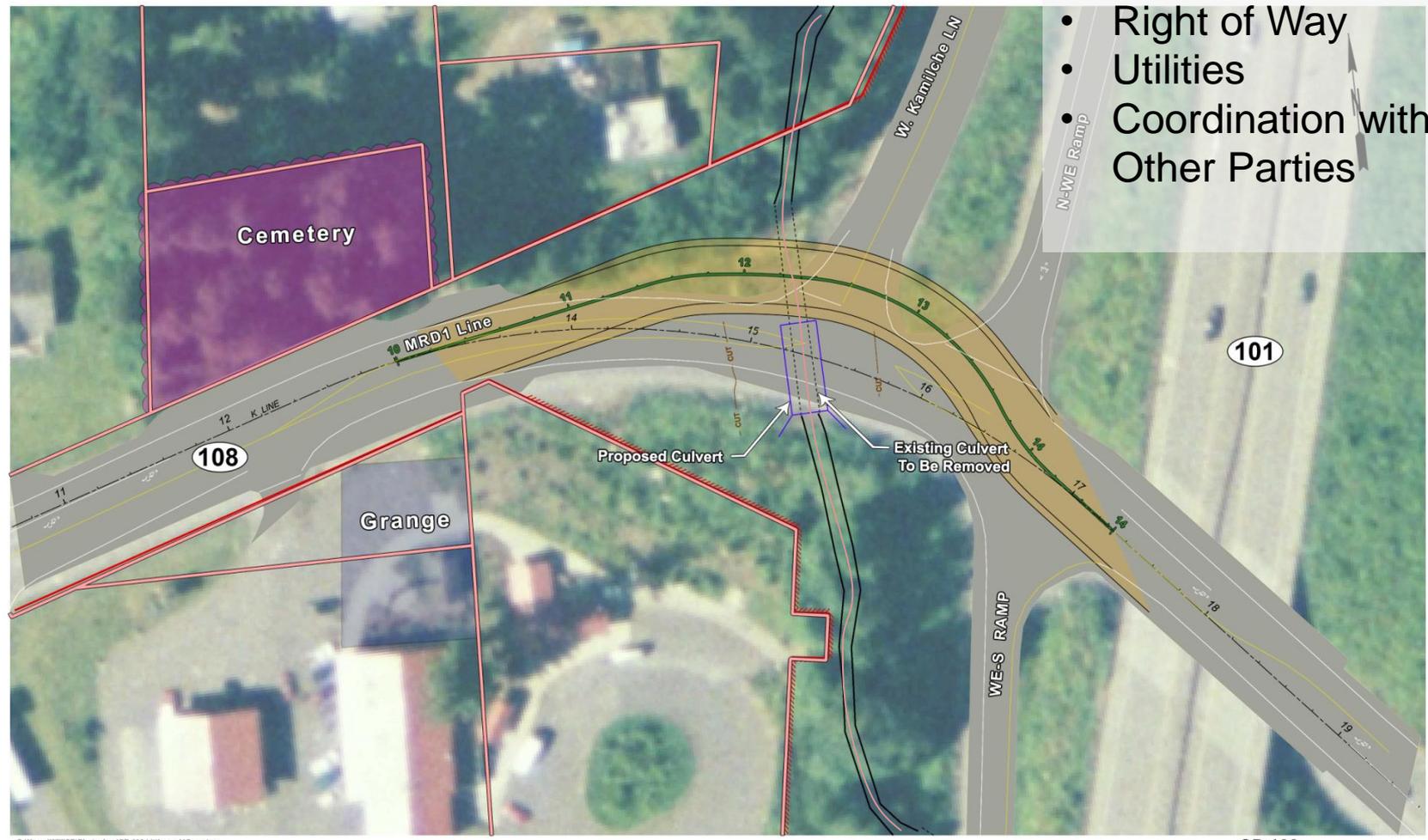


# Dogfish Creek Fish Passage Coordination



# Cost and Complexity Drivers

- Traffic Management
- Site characteristics
- Right of Way
- Utilities
- Coordination with Other Parties



©:Users\WIIISD\Photoshop\SR 108 Littlecreek\Cemetery

0 25 50  
SCALE IN FEET

SR 108  
LITTLE CREEK -  
REMOVE FISH BARRIER



Little Creek temporary traffic shift

## Cost and Complexity Drivers

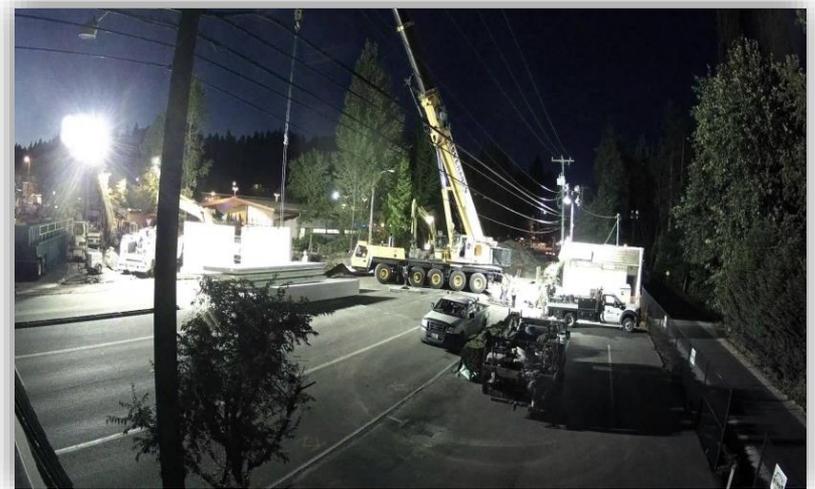
- Public Safety
- Design Requirements
  - Geotechnical Conditions
  - Traffic Volumes and Loads
  - Seismic
- In-Water Work Timing Limitations



SR 542 Anderson Creek



SR 202 Coe Clemmons Creek



SR 522 Lyon Creek

# Efficiencies in Correcting Barriers

- Developed specialized fish passage delivery teams
- Created standard designs for buried structures for 20 – 60 foot spans
- Streamlined Federal ESA consultations – programmatic approvals in place (e.g., NOAA approvals now taking 2 days compared to 45-288 days in past)
- Established Executive Oversight Committee with WDFW to improve the permitting process
- Implementing Practical Design -- focus on only correcting barriers, and not making other improvements
- Utilizing on-call consultants and Design/Build to meet delivery dates
- Bundling projects to achieve geographic efficiencies

# Contact

For more information about  
Restoring Fish Passage at WSDOT Stream Crossings, please contact:

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